

**REMARKS**

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

**Summary of the Office Action**

Claim 7 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Claims 1 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamakawa et al.* further considered with *Ichimura et al.* The Office Action does not state particular document numbers for these two applied references. Accordingly, the record is not clear as to exactly what documents are being applied by the Examiner. Applicants will proceed with the understanding that the Examiner is applying U.S. Patent No. 5,875,164 to *Yamakawa et al.* because it was listed on the PTO-892 Form attached to the Office Action. Also, Applicants understand that the applied *Ichimura et al.* is U.S. Patent No. 6,041,031. To the extent that Applicants' understandings are incorrect, clarification is respectfully requested in the next office communication.

Claim 6 stands objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

**Summary of the Response to the Office Action**

Applicants amend claims 6 and 7 by this amendment. Accordingly, claims 1, 6 and 7 remain currently pending for consideration.

**The Disposition of the Claims**

Applicants appreciate the Examiner's indication that claim 6 would be allowable if rewritten in independent form as noted at paragraph 5 of the Office Action. Accordingly,

Applicants rewrite claim 6 in independent form by this amendment. Thus, Applicants respectfully submit that claim 6, as amended, is in prima facie condition for allowance.

In addition, claims 1 and 7 also are believed to be allowable for at least the following reasons.

**Claim Rejection Under 35 U.S.C. §112, Second Paragraph**

Claim 7 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Office Action states that “claim 3 depends from claim 1; however, claim 3 recites desired results. The examiner is not clear as to how these desired results occur from the structure positively recited and respectfully requests further clarification.” Page 2, lines 6-8 of the Office Action. Applicants will proceed with the understanding that the Office Action’s reference to “claim 3” in the above quoted portion is a typographical error intended to instead refer to --claim 7--. If Applicants’ understanding in this regard is incorrect, Applicants respectfully request that clarification be provided in the next office communication.

Accordingly, Applicants have newly amended claim 7 in accordance with the Examiner’s comments and Applicants respectfully submit that claim 7, as newly-amended, fully complies with the requirements of 35 U.S.C. § 112, second paragraph. As a result, withdrawal of the rejection of claim 7 under 35 U.S.C. §112, second paragraph is respectfully requested.

**Claim Rejections Under 35 U.S.C. §103(a)**

Claims 1 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamakawa et al.* further considered with *Ichimura et al.* This rejection is respectfully traversed for at least the following reasons.

Applicants respectfully submit that *Yamakawa et al.* in view of *Ichimura et al.* do not render claims 1 and 7 unpatentable because *Yamakawa et al.* and *Ichimura et al.*, whether taken separately or in combination, fail to teach or suggest every feature of claims 1 and 7. For example, Applicants respectfully submit that *Yamakawa et al.* and *Ichimura et al.*, whether taken separately or in combination, fail to teach or suggest the claimed combination as set forth in independent claim 1 including at least the features that “said photodetector has a normalized detector size ( $B/\beta^2$ ) of a size of  $10 \mu\text{m}^2$  to  $50 \mu\text{m}^2$ ,” and “the normalized detector size ( $B/\beta^2$ ) is given by an equation of  $B/\beta^2 = L^2 / (f_c/f_{OB})^2$  wherein  $L$  denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens.”

In the rejection, the Office Action appears to assert that the arrangement of *Yamakawa et al.* corresponds to the pickup device set forth in independent claim 1, except that the objective lens of *Yamakawa et al.* does not have a numerical aperture of 0.85 or greater. The Office Action, at paragraph 4, lines 3-5, cites figures 23 and 24 of *Yamakawa et al.* and *Yamakawa et al.*’s disclosure beginning at column 9, line 31.

However, Applicants respectfully submit that *Yamakawa et al.*’s disclosure beginning at column 9, line 31 states that “FIG. 23 shows normalized detector sizes that are 10, 15, and  $20 \mu\text{m}$  in terms of sides of square shapes. Each of the normalized detector sizes is calculated by dividing the length  $L$  of an actual detector (the photodetector units of the photodiode 61) by a magnification  $m$  of the objective 44 ( $L/m$ ).” Thus, it is respectfully submitted that the normalized detector size set forth in *Yamakawa et al.* is different from the normalized detector size set forth in Applicants’ independent claim 1. In addition, it is further respectfully submitted

that *Yamakawa et al.* uses a different equation to calculate its normalized detector size from the equation set forth in Applicants' independent claim 1. As a result, *Yamakawa et al.*'s normalized detector size has a unit of  $\mu\text{m}$ , while the normalized detector size range recited in Applicants' claim 1 has a unit of  $\mu\text{m}^2$ . Applicants respectfully submit that no portion of *Yamakawa et al.*'s disclosure teaches or suggests at least the claimed feature of "wherein said photodetector has a normalized detector size ( $B/\beta^2$ ) of a size of  $10 \mu\text{m}^2$  to  $50 \mu\text{m}^2$ ," as set forth in claim 1.

In addition, Applicants respectfully submit that using the dimensions of *Yamakawa et al.* at column 9, lines 31-43, where each length of the square-sized photodetector is disclosed as being 10, 15 and 20  $\mu\text{m}$ , and assuming that *Yamakawa et al.*'s magnification of the objective of 7.2 is similar to the term ( $f_c/f_{OB}$ ) set forth in Applicants' claim 1, *Yamakawa et al.*'s arrangement would have normalized detector sizes of about 1.93, 4.34 and 7.71  $\mu\text{m}^2$  based on the equation set forth in Applicants' independent claim 1. For instance,  $L^2/(f_c/f_{OB})^2 = (10\mu\text{m})^2/7.2^2 \cong 1.93 \mu\text{m}^2$ . Accordingly, Applicants respectfully submit that *Yamakawa et al.* fails to teach or suggest the claimed combination as set forth in independent claim 1 including at least the features that "said photodetector has a normalized detector size ( $B/\beta^2$ ) of a size of  $10 \mu\text{m}^2$  to  $50 \mu\text{m}^2$ ," and "the normalized detector size ( $B/\beta^2$ ) is given by an equation of  $B/\beta^2 = L^2/(f_c/f_{OB})^2$  wherein  $L$  denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens."

Further, it is respectfully submitted that *Ichimura et al.* is not relied upon to teach a photodetector having a normalized detector size of a size of  $10 \mu\text{m}^2$  to  $50 \mu\text{m}^2$ , and does not remedy the above-discussed deficiencies of *Yamakawa et al.* Accordingly, Applicants respectfully submit that *Yamakawa et al.* and *Ichimura et al.*, whether taken separately or in

combination, fail to teach or suggest the claimed combination as set forth in independent claim 1 including at least the features that “said photodetector has a normalized detector size ( $B/\beta^2$ ) of a size of  $10 \mu\text{m}^2$  to  $50 \mu\text{m}^2$ ,” and “the normalized detector size ( $B/\beta^2$ ) is given by an equation of  $B/\beta^2 = L^2 / (f_c/f_{OB})^2$  wherein L denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens.”

M.P.E.P. §2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” Since, in view of the above, *Yamakawa et al.* in view of *Ichimura et al.* fail to teach or suggest every element set forth in independent claim 1, it is respectfully submitted that *Yamakawa et al.* in view of *Ichimura et al.* do not render claim 1 unpatentable. Further, since claim 7 depends from claim 1, it is respectfully submitted that *Yamakawa et al.* in view of *Ichimura et al.* also do not render claim 7 unpatentable. Accordingly, withdrawal of the rejection of claims 1 and 7 under 35 U.S.C. §103(a) is respectfully requested.

### **Conclusion**

In view of the foregoing, withdrawal of the rejections and allowance of the pending claims are earnestly solicited. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310.

If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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By:



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